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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Yuzo Mori

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EXAMINER

MENDEZ, ZULMARIAM

ART UNIT

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1795

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/500,576	Applicant(s) MORI ET AL.	
	Examiner ZULMARIAM MENDEZ	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nogami et al. (US Patent no. 6,693,036) in view of Bruns et al. (US Patent no. 5,149,405).

With regard to claims 9-10, Nogami discloses a polishing apparatus and method comprising: a holder (42) for detachably holding a work piece (W, see figure 1; col. 3, line 24; col. 7, lines 33-34); a processing electrode (23; see figure 6) that can come close to or into contact with the work piece (W) held by the holder (42); a feeding electrode (15, 20) for feeding electricity to the workpiece held by the holder (42); an ion exchanger/scrub member (24; the scrub member is formed by a material capable of absorbing the electrolyte made of a solvent and a solute dissociated into ions; col. 9,

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lines 25-28; col. 11, lines 60-61) disposed in at least one of the space between the work piece (W) and the processing electrode (23, as shown in figure 6) and the space between the workpiece (W) and the feeding electrode (15, 20); a fluid supply section (20a; col. 3, lines 31-33) for supplying a fluid between the workpiece (W) and at least one of the processing electrode (23) and the feeding electrode (15, 20), in which the ion exchanger (24) is present; a power source (61; col. 10, lines 66-67; col. 3, lines 57-61) for applying a current or a voltage at a constant value between the processing electrode (23) and the feeding electrode (15, 20); a drive section for allowing the workpiece (W) held by the holder (42) and the processing electrode (23), facing each other, to make a relative movement (col. 3, lines 61-63); and a controller (55) having the function of controlling the entire polishing apparatus, speed of the wafer as well as the stop step and current between electrodes (col. 6, lines 52-53; col. 7, lines 58-61).

However, Nogami fails to explicitly disclose wherein the controller is a numerical controller.

Bruns discloses a method and apparatus for electrochemically machining a work piece (col. 2, lines 28-30) wherein a numerical controller is used in order to control relative movement as well as a power source to improve the electrochemical machining process and to effect a better control between the electrodes (col. 8, lines 22-40).

Therefore, one having ordinary skill in the art at the time of the invention would have found it obvious to modify the controller, as taught by Bruns, by using a numerical controller in the electro-polishing apparatus of Nogami, in order to control relative

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movement as well as a power source to improve the electrochemical machining process and to effect a better control between the electrodes.

With regard to claims 11-12, Nogami discloses a polishing apparatus and method comprising: providing a processing electrode (23; see figure 6), a feeding electrode (15, 20) and an ion exchanger/scrub member (24; the scrub member is formed by a material capable of absorbing the electrolyte made of a solvent and a solute dissociated into ions; col. 9, lines 25-28; col. 11, lines 60-61) disposed in at least one of the space between a workpiece (W) held by a holder (42) and the processing electrode (23) and the space between the work piece (W) and the feeding electrode (15, 20; see figure 1; col. 3, line 24; col. 7, lines 33-34); allowing the processing electrode (23) to be close to or in contact with the workpiece (W) held by the holder (42) while feeding electricity from the feeding electrode (15, 20) to the work piece (W; col. 10, lines 66-67; col. 3, lines 57-61); supplying a fluid to the space between the workpiece and at least one of the processing electrode and the feeding electrode, in which the ion exchanger is present (20a; col. 3, lines 31-33); applying a constant voltage between the processing electrode (23) and the feeding electrode (15, 20); and allowing the work piece (W) held by the holder (42) and the processing electrode (23), facing each other, to make a relative movement (col. 3, lines 61-63); while controlling the movement by a controller (55) having the function of controlling the entire polishing apparatus, speed of the wafer as well as the stop step and current between electrodes (col. 6, lines 52-53; col. 7, lines 58-61). However, Nogami fails to explicitly disclose wherein the controller is a numerical controller.

Bruns discloses a method and apparatus for electrochemically machining a work piece (col. 2, lines 28-30) wherein a numerical controller is used in order to control relative movement as well as a power source using coordinate data, and measuring, inputting and comparing the form of the workpiece using the numerical control (col. 8, lines 22-40) to improve the electrochemical machining process and to effect a better control between the electrodes. Therefore, one having ordinary skill in the art at the time of the invention would have found it obvious to modify the controller, as taught by Bruns, by using a numerical controller in the electro-polishing apparatus of Nogami, in order to control relative movement as well as a power source to improve the electrochemical machining process and to effect a better control between the electrodes.

Response to Arguments

4. Applicant's arguments filed on November 20, 2008 have been fully considered but they are not persuasive. The applicant argues that Nogami in view of Bruns does not teach or suggest either (1) the ion exchanger or (2) the numerical controller as recited in each of new independent claims 9 and 10. The examiner does not find this argument persuasive because Nogami teaches wherein the scrub member (24) is formed by a material capable of absorbing the electrolyte and the slurry and passing them from one surface to another wherein the electrolyte is a solution made of a solvent and a solute dissociated into ions and the member (24) is formed by a sponge-like material, or a porous material so as not to cause a scratch or any damage in the surface of the wafer. For example, there can be mentioned a porous body made of a resin such

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as a polyvinyl acetal (PVA; col. 9, lines 44-55). The applicant states, in paragraph 42 of the US Patent Application Publication no. 2005/0115838, wherein the ion exchange membrane may be a polyethylene, polypropylene or any other organic polymer. Further, besides the form of a non-woven fabric, the ion exchanger may be a porous material among others. Therefore, the scrub material as disclosed by Nogami is understood to be capable of performing such a function.

5. Regarding applicant's argument of the numerical controller, the examiner does not find this argument persuasive because Bruns teaches an electrolytic processing apparatus and process wherein a numerical controller is used for a numerical control of a drive section for relative motion and potential supply using coordinate data, measuring, inputting and comparing the form of a work-piece (col. 3, line 59 to col. 8, line 47; see also figures 2-4).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ZULMARIAM MENDEZ whose telephone number is (571)272-9805. The examiner can normally be reached on Monday-Friday from 9am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa D. Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Harry D Wilkins, III/
Primary Examiner, Art Unit 1795

/Z. M./
Examiner, Art Unit